

Section 2: Goals, Objectives and Performance Measures

The governing statutes for the Energy Master Plan for New Jersey require the goals of the plan to focus on (1) energy security, (2) economic growth, and (3) environmental impact. For each goal, numerous draft objectives are listed. The draft objectives are meant to establish quantifiable measurements to achieve our goals between now and 2020. Each set of draft objectives includes suggestions of some of the strategic and programmatic approaches to meeting these objectives that may be considered by the Energy Master Plan Committee departments and agencies.

Goal 1: To Provide New Jersey with Secure, Safe, and Reasonably Priced Energy Supplies and Services

To provide secure, safe, and reasonably priced energy supplies and services to New Jersey's commercial, industrial, transportation, and residential customers, while reducing dependence on traditional fuels and fossil fuel generation, decreasing electric and natural gas transmission congestion, utilizing efficiency and renewable resources to supplement the state's energy resources, proactively planning for in-state electricity generation retirement, and reducing, where possible, the overall demand for energy.

The objectives required to satisfy this mandate are: Resource Management; Reliability, Security and Safety; and Reasonable Rates and Price Stability. Public Education is added as a second tier objective.

Resource Management Objectives¹

- ***Electricity²***

1. Attain technically feasible electricity efficiency and conservation gains of 19.95 million MWhs by 2020.

This objective is based on Governor Corzine's campaign proposal to reduce total projected electricity demand³ by 20 % by 2020. Electricity usage is projected to increase from 78.34 million MWhs in 2004 to 99.73 million MWhs in 2020, without additional energy efficiency efforts. The 2020 usage was reduced by 20% to arrive at this objective.

2. 22.5 % of electricity consumed in the state will be met with renewable energy resources by 2020.

¹ These objectives were developed to follow the concept of reducing demand and having a portion of the net demand met by renewable fuels set forth in the electricity objective.

² The objectives related to electricity may be achieved by actively reducing electricity consumption, peak loads, and electric transmission congestion. Utilizing currently available efficiency technologies, clean distributed generation, and conservation mechanisms including demand response, load management and load shifting may be appropriate strategies for meeting these objectives.

³ See draft Electricity paper <http://nj.gov/emp/home/docs/pdf/061013e.pdf>

3. The remainder⁴ of electricity consumption in the state will be generated from A% nuclear, B% natural gas and C% coal.

- ***Heat***⁵

4. Attain technically feasible efficiency and conservation gains of 77.2 trillion BTUs of non-electric heating demand by 2020.

Non-electric heating demand⁶ is projected to increase from 354.5 trillion BTUs in 2004 to 386.2 trillion BTUs in 2020, without additional energy efficiency efforts. The 2020 usage was reduced by 20% to arrive at this objective.

5. Meet 5 % of heating demand in the state with renewable fuels by 2020.
6. Determine the amount⁷ of natural gas, and other petroleum products needed in 2020 to serve the total requirements, with due consideration to supply, demand, storage and deliverability.

- ***Transportation***

7. Decrease petroleum demand⁹ by X million barrels of gasoline and diesel oil demand by 2020.

Petroleum usage is projected to increase from 127.8 million barrels of gasoline and diesel oil in 2004 to 159.6 million barrels of gasoline and diesel oil in 2020, without additional energy efficiency efforts.

8. Meet¹⁰ X% of petroleum demand in the state with renewable fuels by 2020.

Reliability, Security, and Safety Objectives

- ***Electricity***

⁴ In this initial phase of the planning process, optimal fuel mix to generate electricity in 2020 has not been determined and has been left blank. However, the fuel mix will be determined before the issuance of the draft Energy Master Plan in the spring of 2007 based on economic and environmental impact analysis of various electricity supply scenarios with due consideration to proposed and possible retirements of existing nuclear and conventional resources and possible construction of new in state generation and out-of-state transmission facilities.

⁵ The term heat herein refers to non electric space heating requirements in the residential, commercial and industrial sectors. The objectives may be achieved by working to actively reduce natural gas, heating oil and propane consumption by utilizing currently available energy efficient construction techniques in new construction and retrofitting, and through the implementation of conservation mechanisms including demand response, load management and load shifting.

⁶ See Heating Fuels paper <http://nj.gov/emp/home/docs/pdf/061013f.pdf>

⁷ The determination of non-heating fuels requirements will consider potential efficiency gains in steam generation/distribution, industrial process efficiency etc.

⁹ In this initial phase of the planning process, the target reduction quantity is left blank. It will be determined after an analysis is made of achievable potential.

¹⁰ See Footnote 9

9. Achieve a 20% reduction in the statewide incidents of regulated electric utility outages measured as a SAIFI rating by 2020 compared to a three year benchmark SAIFI computed from 2003-2005.

This objective is based on the New Jersey Board of Public Utilities Strategic Plan that calls for the reduction by 2008 of statewide incidents of regulated electric utility outages, as measured by System Average Interruption Frequency Index (SAIFI), of 5% compared to the three-year average beginning 2003.

10. Achieve a 20 % reduction in the statewide duration of regulated electric utility outages measured as a CAIDI rating by 2020 compared to a three year benchmark CAIDI computed from 2003-2005.

This objective is based on the New Jersey Board of Public Utilities Strategic Plan that calls for the reduction by 2008 of statewide duration of regulated electric utility outages, as measured by Customer Average Interruption Duration Index (CAIDI), of 5% compared to the three year average beginning 2003.

- ***Heat***

11. By 2020, reduce statewide damage incidents, due to excavations, to underground natural gas utilities facilities by 15% compared to a five year average ending in 2003.

This objective is based on the New Jersey Board of Public Utilities Strategic Plan that calls for a 5% reduction by 2008.

Reasonable Rates and Price Stability Objectives

- ***Electricity¹¹***

12. Electricity prices per unit in New Jersey should remain no more than + 5% of the regional average⁶.
13. Eliminate transmission congestion by 2020 to equalize wholesale electricity Locational Marginal Prices.

- ***Heat¹³***

¹¹ The objectives related to electricity may be achieved using a combination of energy efficiency, load management including load shifting, clean distributed generation and transmission and distribution infrastructure improvements, and reduce electric transmission congestion in New Jersey. Increasing consumer awareness about existing incentive programs for the installation of renewable energy systems in homes, businesses and institutional setting is another means of obtaining these objectives.

⁶ Regional averages are based on PADD IB districts and include New York, New Jersey, Pennsylvania, Delaware, Maryland and DC.

¹³ The objectives related to heat may be achieved through increasing the storage capacity within New Jersey to more easily meet winter natural gas demand with adequate supplies. This may be achieved by moving ahead with the

14. Natural gas prices per unit in New Jersey should remain below the regional average price¹⁴ by at least 15%.

- ***Transportation***

15. Gasoline prices per unit in New Jersey should remain at or below the regional average price¹⁵.

Public Awareness and Education

- ***Electricity, Heat, and Transportation***

16. By 2020, 100% of public schools will implement an energy efficiency, conservation and renewable energy curriculum as part of their mandatory course work.
17. By 2012, each of New Jersey's public college and vocational schools will have developed and implemented programs and education strategies to promote energy efficiency, conservation and the use of renewable energy among students, faculty and staff.
18. By 2008, the Office of Clean Energy will develop educational materials and programs about how government and businesses can promote efficiency, renewables and innovative energy policies, such as car-pooling, telecommuting, load management, and other related topics.
19. By 2009, the materials and programs in objective 16 will be distributed to private businesses with over 50 employees, all state agencies and local governments.

Goal 2: Economic Growth and Development

Economic Indicators

- ***Gross State Product***

Between 1990 and 2004 New Jersey's Gross State Product (GSP) grew by 44%¹⁶ in real 2000 dollars. This growth was achieved while at the same time reducing the energy use per

construction and operation of a Liquefied Natural Gas port in the southern part of the state. Additionally, by working to improve the efficiency of buildings through proper weatherization and installation of more efficient heat generating units, such as combined heat and power units, the demand for natural gas will be lower. This could be accomplished using existing building specifications, such as Energy Star[®] certification, in the construction or retrofit of buildings. This effort can also be helped by continuing to fund programs assisting low-income residents with household energy bills and weatherization of public housing and other public buildings.

¹⁴ See footnote 6

¹⁵ See footnote 6.

dollar of GSP. This practice will be sustained through this plan by requiring all programs to undergo a GSP assessment. Determinations must be made on the impact a program will have on New Jersey's GSP as well as its impact on energy use. The goals of the Energy Master Plan should enhance the growth of the economy of the State.

- ***Energy Efficiency***

Energy efficiency in the economy measures the relationship between the GSP and amount of energy it took to produce it. This is important because it directly affects the health of our economy. The more energy efficient an economy is the less it spends on energy and the stronger it is. As the economy grows, the energy efficiency of the State should increase. New Jersey's economy has increased its energy efficiency at least 1.5% per year between 1990 and 2004. This has been a small yet positive trend. To further strengthen New Jersey's economy determinations must be made on the impact an Energy Master Plan program will have on the New Jersey economy's energy efficiency and seek to increase the energy efficiency rate of the economy of the State.

- ***Job Growth***

Promoting the establishment of renewable and advanced energy technology industries within the state would likely lead to job growth. Note that the Renewable Portfolio Standard Report found that a 20% RPS would produce 11,700 jobs. Investments in higher education programming could advance the future labor capacity in the fields of advanced and renewable energy technologies in the State. Nonetheless, all programs proposed in the Energy Master Plan should undergo a thorough assessment as it relates to job growth. Determinations must be made on the impact a program will have on job growth in New Jersey. In addition, the determinations must take into account the type of job growth a program may produce. The goals of the Energy Master Plan should increase job opportunity and labor capacity in the State.

Goal 3: Environmental Protection and Impact

Environmental Objectives

¹⁶ U.S. Bureau of Economic Analysis, "Regional Economic Accounts: Gross State Product", accessible online at <http://www.bea.gov/bea/regional/gsp/default.cfm>.

Strategies pursued in meeting energy resource management and economic growth and development objectives should be evaluated in the context of the impact of these strategies on achieving national air ambient quality requirements, achieving long-term reductions in greenhouse gas emissions, and improving water quality.

- **Air Quality**

When reviewing the impacts to air quality, the National Ambient Air Quality Standards (NAAQS) for criteria pollutants, especially ground level ozone, particulate matter, and sulfur dioxide must be consulted. Attainment and maintenance of the NAAQS is highly dependent on the success of the EMP in reducing fossil fuel use in all sectors, especially in transportation, power generation, and space heating. The assessment should highlight the relationships between policies and emission reductions and corresponding changes in environmental policies needed to capture those reductions. Specific reductions of emissions of nitrogen oxides, volatile organic compounds, fine particulates, and sulfur dioxide should be presented for each of the alternatives being considered. Special attention should be granted to policies that reduce air pollution in air quality non-attainment areas. The policies of the Energy Master Plan should seek to achieve and maintain the National Ambient Air Quality Standards and to overall support the improvement of our air quality. For control of ozone, special attention should be made to address nitrogen oxide and volatile organic compound emissions on high ozone days, usually the hottest summer days when electric generation is at its maximum, and poorly controlled units are used at their maximum.

- **Greenhouse Gas Emissions**

Strategies pursued should be aligned with an overarching State objective of stabilizing greenhouse emissions in the mid-term, and achieving significant long-term greenhouse gas emissions reductions. The reductions of greenhouse gas emissions should be presented for each of the alternatives being considered.

- **Water Quality**

Each environmental assessment made must include a review of the risk it poses to water quality, in particular the impact it will have on mercury levels. The policies of the Energy Master Plan should seek to decrease the quantity of mercury found in New Jersey water resources and fish found in New Jersey waters.